



**PATENT**

Attorney Docket No. SYNGEN-06067

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of: Ronald H. Chiarello *et al.*

Serial No.: 09/894,423

Group No.: 1636

Filed: 6/28/01

Examiner: Qian, C.

**Price.**

## **Compositions and Methods for Labeling Oligonucleotides**

# INFORMATION DISCLOSURE STATEMENT

Mail Stop RCE  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.8(a)(1)(i)(A)**

I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is, on the date shown below, being deposited with the U.S. Postal Service with sufficient postage as first-class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA. 22313-1450.

Dated: December 17, 2003

By: Thomas W. Brown

Sir or Madam:

The citations listed below, copies attached, may be material to the examination of the above-identified application, and are therefore submitted in compliance with the duty of disclosure defined in 37 C.F.R. §§ 1.56 and 1.97. The Examiner is requested to make these citations of official record in this application.

The following printed publications are referred to in the body of the specification:

- U.S. Patent 5,231,191, issued July 27, 1993 to Woo *et al.*;
  - *Color Index* by the Association of Textile Chemists, 2nd Edition, 1971<sup>1</sup>;
  - Doty *et al.*, "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Physical Chemical Studies," *Proc. Natl. Acad. Sci. USA* 46:461 (1960);

<sup>1</sup> We have been unable to obtain this reference, but if the examiner request a copy we will seek to obtain it.

- Hung *et al.*, "Energy Transfer Primers with 5- or 6-Carboxyrhodamine-6G as Acceptor Chromophores," *Analytical Biochem.*, 238, 165-170, (1996); and
- Marmur and Lane, "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Biological Studies," *Proc. Natl. Acad. Sci. USA* 46:453-461 (1960).

Applicants have become aware of the following printed publications which may be material to the examination of this application:

- Caruthers *et al.*, "Chemical Synthesis of Deoxyoligonucleotides by the Phosphoramidite Method," *Methods in Enzymology* 154:287-313 (1987).
- Horvath *et al.*, "An Automated DNA Synthesizer Employing Deoxynucleoside 3'-Phosphoramidites," *Methods in Enzymology* 154:314-326 (1987).
- Igloi, "Stratedies for introducing non-radioactive labels during the automated sequence analysis of necleic acids," *ELB Electronic Journal of Biotechnology* 1(1):1-8 (1998).
- Jang *et al.*, "Ligation mediated fluorescent labeling of DNA sequencing primers," *Nucleic Acids Research* 25(4):922-923 (1997).
- Joslin Diabetes Center, DNA Core Facility, "DNA Stnthesis Steps," Revised 9/10/99 [dnacore.joslabs.harvard.edu/core/cycle.html](http://dnacore.joslabs.harvard.edu/core/cycle.html).
- Paladichuk, "Fishing in a Molecular Sea," *The Scientist* 13(2):19 (1999), [www.the-scientist.com/yr1999/jan/profile1\\_990118.html](http://www.the-scientist.com/yr1999/jan/profile1_990118.html).
- Pon, "Tips for Oligonucleotide Synthesis," [www.abrf.org/ABRFNews/1994/December1994/dec94ponoligo.html](http://www.abrf.org/ABRFNews/1994/December1994/dec94ponoligo.html).
- Rios, "Phosphoramidite Chemistry," [sonhouse.hunter.cuny.edu/facilities/sequence/phoschem.htm](http://sonhouse.hunter.cuny.edu/facilities/sequence/phoschem.htm).
- Wilkinson, "Oligo Factory, A Profile of Automated Nucleic Acid Synthesizers," *The Scientist* 13(21):18 (1999) [www.the-scientist.com/yr1999/oct/profile1\\_991025.html](http://www.the-scientist.com/yr1999/oct/profile1_991025.html).

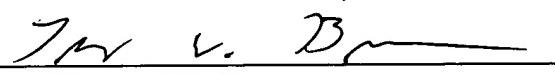
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The following were cited in the International Search Report mailed December 20, 2002:

- Lyttle *et al.*, "Versatile Linker Chemistry for Synthesis of 3'-Modified DNA," *Bioconjugate Chem* 8:193-198 (1997).
- Sinha *et al.*, "The preparation and application of functionalised synthetic oligonucleotides: III. Use of H-phosphonate derivatives of protected amino-hexanol and mercapto-propanol or-hexanol," *Nucleic Acids Research* 16(6):2659-2669 (1988).

This Information Disclosure Statement under 37 C.F.R. §§ 1.56 and 1.97 is not to be construed as a representation that a search has been made, that additional information material to the examination of this application does not exist, or that any one or more of these citations constitutes prior art.

Dated: December 17, 2003

  
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FORM PTO-1449 (Modified)		U.S. Department of Commerce Patent and Trademark Office		Attorney Docket No.: SYNGEN-06067		Serial No.: 09/894,423	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use Several Sheets If Necessary)  (37 CFR § 1.98(b))				Applicant: Ronald H. Chiarello <i>et al.</i>			
				Filing Date: 6/28/01		Group Art Unit: 1636	
U.S. PATENT DOCUMENTS							
Examiner Initials	Cite No.	Serial / Patent Number	Issue Date	Applicant / Patentee	Class	Subclass	Filing Date
	1	5,231,191	7/27/93	Woo <i>et al.</i>	549	220	10/22/90
OTHER DOCUMENTS (Including Author, Title, Date, Relevant Pages, Place of Publication)							
	2	Caruthers <i>et al.</i> , "Chemical Synthesis of Deoxyoligonucleotides by the Phosphoramidite Method," <i>Methods in Enzymology</i> 154:287-313 (1987)					
	3	Doty <i>et al.</i> , "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Physical Chemicals Studies," <i>Proc. Natl. Acad. Sci. USA</i> 46:461 (1960)					
	4	Horvath <i>et al.</i> , "An Automated DNA Synthesizer Employing Deoxynucleoside 3'-Phosphoramidites," <i>Methods in Enzymology</i> 154:314-326 (1987)					
	5	Hung <i>et al.</i> , "Energy Transfer Primers with 5- or 6-Carboxyrhodamine-6G as Acceptor Chromophores," <i>Analytical Biochem.</i> , 238, 165-170, (1996)					
	6	Igloi, "Strategies for introducing non-radioactive labels during the automated sequence analysis of nucleic acids," <i>ELB Electronic Journal of Biotechnology</i> 1(1):1-8 (1998)					
	7	Jang <i>et al.</i> , "Ligation mediated fluorescent labeling of DNA sequencing primers," <i>Nucleic Acids Research</i> 25(4):922-923 (1997)					
	8	Joslin Diabetes Center, DNA Core Facility, "DNA Synthesis Steps," Revised 9/10/99 <a href="http://dnacore.joslabs.harvard.edu/core/cycle.html">dnacore.joslabs.harvard.edu/core/cycle.html</a>					
	9	Lyttle <i>et al.</i> , "Versatile Linker Chemistry for Synthesis of 3'-Modified DNA," <i>Bioconjugate Chem</i> 8:193-198 (1997)					
	10	Marmur and Lane, "Strand Separation and Specific Recombination in Deoxyribonucleic Acids: Biological Studies," <i>Proc. Natl. Acad. Sci. USA</i> 46:453-461 (1960)					
	11	Paladichuk, "Fishing in a Molecular Sea," <i>The Scientist</i> 13(2):19 (1999), <a href="http://www.the-scientist.com/yr1999/jan/profile1_990118.html">www.the-scientist.com/yr1999/jan/profile1_990118.html</a>					
	12	Pon, "Tips for Oligonucleotide Synthesis," <a href="http://www.abrf.org/ABRFNews/1994/December1994/dec94ponoligo.html">www.abrf.org/ABRFNews/1994/December1994/dec94ponoligo.html</a>					
	13	Rios, "Phosphoramidite Chemistry," <a href="http://sonhouse.hunter.cuny.edu/facilities/sequence/phoschem.html">sonhouse.hunter.cuny.edu/facilities/sequence/phoschem.html</a>					
	14	Sinha <i>et al.</i> , "The preparation and application of functionalised synthetic oligonucleotides: III. Use of H-phosphonate derivatives of protected amino-hexanol and mercapto-propanol or-hexanol," <i>Nucleic Acids Research</i> 16(6):2659-2669 (1988)					
	15	Wilkinson, "Oligo Factory, A Profile of Automated Nucleic Acid Synthesizers," <i>The Scientist</i> 13(21):18 (1999) <a href="http://www.the-scientist.com/yr1999/oct/profile1_991025.html">www.the-scientist.com/yr1999/oct/profile1_991025.html</a>					
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Examiner:				Date Considered:			
<b>EXAMINER:</b>		Initial citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.					